



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,685	05/09/2007	Keiichi Nagano	050070-0110	7166
20277 7590 11/18/2010 MCDERMOTT WILL & EMERY LLP 600 13TH STREET, N.W. WASHINGTON, DC 20005-3096				
EXAMINER				
PATTON, SPENCER D				
ART UNIT		PAPER NUMBER		
3664				
MAIL DATE		DELIVERY MODE		
11/18/2010		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/576,685

Applicant(s)

NAGANO ET AL.

Examiner

SPENCER PATTON

Art Unit

3664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-19 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 21 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/22)
Paper No(s)/Mail Date 4/21/2006
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

1. The IDS filed 4/21/2006 has been considered. Claims 1-19 are pending.

Claim Objections

2. Claim 3-5 and 8 are objected to because of the following informalities:

Claims 3, 4, 5 and 8: "informing" and "indicating" should be changed to -- indicating--.

Claims 3 and 5: "height difference" and "distance" are values measured between two points. The claims treat these terms as properties of a road without indicating what points these values are measured between.

Claim 8: "or larger than the setting value" should be deleted.
Appropriate correction is required.

3. Claim 17 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claim has not been further treated on the merits.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1-5, 9-13 and 19** are rejected under 35 U.S.C. 102(e) as being anticipated by Donath et al (US Patent No. 6,977,630).

Donath et al teaches:

Re claim 1. A display device for vehicles, characterized by comprising:

display means provided with an indicator that emits display light, and projects the display light to a projection member; and control means for making the display means display a road shape image indicating a shape of a road in front of a vehicle, and three-dimensional information of the road (column 5, lines 25-42; column 16, line 58 through column 17, line 7; and claim 37).

Re claim 2. A display device for vehicles, characterized by comprising: display means; and control means for making the display means display a road shape image indicating a shape of a road in front of a vehicle, and three-dimensional information of the road (column 5, lines 25-42; column 16, line 58 through column 17, line 7; and claim 37).

Re claim 3. The control means makes the display means display, as the three-dimensional information, a height difference index informing a height difference of the road (column 6, lines 10-24).

Re claim 4. The control means makes the display means display, as the three-dimensional information, a slope index informing a horizontal slope of the road (column 6, lines 10-24).

Re claim 5. The control means makes the display means display, as the three-dimensional information, a distance index indicating a distance of the road (Figure 3 and column 16, line 58 through column 17, line 7).

Re claim 9. The road shape image includes a line indicating a width line of the road (column 7, lines 47-61 and Figure 3D).

Re claim 10. The road shape image includes a line indicating a center line of the road (column 7, lines 47-61 and Figure 3D).

Re claim 11. The control means applies a mapping process to a texture image on the road shape image (column 19, lines 23-32).

Re claim 12. In the road shape image, the texture image varies in pattern density or color between a portion of a road shape in the vicinity of the vehicle, and a portion of the road shape at a distance from the vehicle (column 19, lines 23-32).

Re claim 13. The control means makes the display means display the road shape image to overlay the road (column 5, lines 25-42).

Re claim 19. A storage section that stores the road shape image, and a display format and a display setting of the three-dimensional information; and operation means for changing the road shape image, and the display format and the display setting of the three-dimensional information (column 10, line 50 through column 11, line 14).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Donath et al (US Patent No. 6,977,630) as applied to claims 1, 2 and 5 above, and further in view of Matsuoka et al (JP 09-287960).

The teachings of Donath et al have been discussed above. Donath et al fails to specifically teach **(re claim 6)** the distance index includes a plurality of lines of a uniform distance interval.

Matsuoka et al teaches, at Figure 2, that lines at uniform distance intervals provide a sense of space to a user.

In view of Matsuoka et al's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the display device as taught by Donath et al, **(re claim 6)** the distance index includes a plurality of lines of a uniform distance interval; since Matsuoka et al teaches that lines at uniform distance intervals provide a sense of space to a user, thus creating a more immersive interface.

8. **Claims 7, 8 and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Donath et al (US Patent No. 6,977,630) as applied to claims 1 and 2 above, and further in view of Yokoshima (JP 10-269495).

The teachings of Donath et al have been discussed above. Donath et al fails to specifically teach **(re claim 7)** the control means makes the display means display, as the three-dimensional information, a curvature index indicating a curvature of the road; **(re claim 8)** when the curvature of the road is a predetermined setting value or larger or larger than the setting value, the control means makes the display means display, as the three-dimensional information, a curve warning display informing that the road is tightly curved; and **(re claim 18)** when the vehicle is driving at a speed requiring warning in consideration of the shape of the road in front of the vehicle, the control means makes the display means display a speed warning display as the three-dimensional information.

Yokoshima teaches, at the abstract and paragraphs [0042-0045], determining a curve difficulty based on curve radius and vehicle speed and displaying an indication of a difficulty of an upcoming curve to alert a driver.

In view of Yokoshima's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the display device as taught by Donath et al, **(re claim 7)** the control means makes the display means display, as the three-dimensional information, a curvature index indicating a curvature of the road; and **(re claim 8)** when the curvature of the road is a predetermined setting value or larger or larger than the setting value, the control means makes the display means display, as the three-dimensional information, a curve warning display informing that the road is tightly curved; and **(re claim 18)** when the vehicle is driving at a speed requiring warning in consideration of the shape of the road in front of the vehicle, the control means makes the display means display a speed warning display as the three-dimensional information; since Yokoshima teaches determining a curve difficulty based on curve radius and vehicle speed and displaying an indication of a difficulty of an upcoming curve to alert a driver.

9. **Claims 14-16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Donath et al (US Patent No. 6,977,630) as applied to claims 1 and 2 above, and further in view of Ninagawa (JP 2000-211452).

The teachings of Donath et al have been discussed above. Donath et al fails to specifically teach **(re claim 14)** the control means makes the display means display an own vehicle index indicating a position of the vehicle corresponding to the road shape image; **(re claim 15)** when the own vehicle index is at a warning position, the control means makes the display means display a position warning display as the three-

dimensional information; and **(re claim 16)** when the vehicle is at a warning position, the control means makes the display means display a position warning display as the three-dimensional information.

Ninagawa teaches, at Figure 2, displaying a front of a vehicle which aids in determining lane position, and at Figures 5 a-c and paragraphs [0044-0046], moving lane markers to indicate to a driver when they have drifted over a white line. This image indicating that the driver's vehicle is not within the lane will alert the driver to this fact so they may correct the situation.

In view of Ninagawa's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the display device as taught by Donath et al, **(re claim 14)** the control means makes the display means display an own vehicle index indicating a position of the vehicle corresponding to the road shape image; **(re claim 15)** when the own vehicle index is at a warning position, the control means makes the display means display a position warning display as the three-dimensional information; and **(re claim 16)** when the vehicle is at a warning position, the control means makes the display means display a position warning display as the three-dimensional information; since Ninagawa teaches displaying a front of a vehicle which aids in determining lane position, and moving lane markers to indicate to a driver when they have drifted over a white line. This image indicating that the driver's vehicle is not within the lane will alert the driver to this fact so they may correct the situation.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SPENCER PATTON whose telephone number is (571)270-5771. The examiner can normally be reached on Monday-Thursday 7:30-5:00; Alternating Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Khoi Tran can be reached on (571)272-6919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SPENCER PATTON/
Examiner, Art Unit 3664
/KHOI TRAN/
Supervisory Patent Examiner, Art Unit 3664
/KHOI TRAN/
Supervisory Patent Examiner, Art Unit 3664